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## AMENDMENTS TO THE CLAIMS

### 1.-6. (Cancelled)

7. (Original) A method of treating, stabilizing or preventing a lower than desired total body weight or a lower than desired percentage of body fat in a mammal comprising:

selecting a mammal in need of treatment for having a lower than desired total body weight or a lower than desired percentage of body fat; and

administering to the mammal a compound that decreases Shp2 activity.

8. (Original) The method of Claim 7, wherein said compound decreases Shp2 activity in neurons of said mammal.

9. (Original) The method of Claim 8, wherein said compound decreases Shp2 activity in neurons of forebrain of said mammal.

10. (Original) The method of Claim 9, wherein said compound decreases Shp2 activity in neurons of hypothalamus of said mammal.

11. (Original) The method of Claim 7, wherein said compound decreases a level of Shp2 mRNA or protein, an activity of Shp2, a half-life of Shp2 mRNA or protein, or a binding of Shp2 to a leptin receptor.

12. (Original) The method of Claim 11, wherein said compound is a Shp2 antagonist.

### 13. (Cancelled)

14. (Original) A screening method for determining a compound useful for treating, stabilizing, or preventing a lower than desired total body weight or a lower than desired percentage of body fat in a mammal, said method comprising

contacting a cell with said compound; and

measuring Shp2 activity in said cell in the presence and absence of the compound, wherein the compound is determined to treat, stabilize, or prevent a lower than desired total body weight or a lower than desired percentage of body fat if the compound decreases the level of Shp2 activity.

### 15.-25. (Cancelled)

26. (New) A genetically modified mouse comprising a disrupted Shp2 gene, wherein said genetically modified mouse is homozygous for said disrupted Shp2 gene, and wherein said

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genetically modified mouse exhibits an increased body weight in comparison to a mouse that does not have a disrupted Shp2 gene.

27. (**New**) The genetically modified mouse of Claim 26, wherein said Shp2 gene is disrupted in the forebrain of said mouse.

28. (**New**) The genetically modified mouse of Claim 26, wherein said mouse has an early onset obesity.

29. (**New**) The genetically modified mouse of Claim 26, wherein said mouse has a resistance to leptin.

30. (**New**) The genetically modified mouse of Claim 26, wherein Shp2 protein level is decreased by 50-70% in the forebrain of said mouse.

31. (**New**) The genetically modified mouse of Claim 26, wherein triglyceride levels are increase in the serum of said mouse.

32. (**New**) The genetically modified mouse of Claim 26, wherein said Shp2 gene is absent in the forebrain of said mouse.

33. (**New**) A method of screening compounds for preventing or ameliorating obesity, comprising:

(a) providing a genetically modified mouse comprising a disrupted Shp2 gene, wherein said genetically modified mouse is homozygous for said disrupted Shp2 gene, and wherein said genetically modified mouse exhibits accelerated increase of body weight;

(b) administering a test compound to said genetically modified mouse;

(c) determining the effect of said test compound on the body weight of said genetically modified mouse; and

(d) correlating a decrease in the body weight of said genetically modified mouse with an anti-obesity effect of said test compound.